Support and Barrier of Online Occupational Therapy Education During Covid-19 in Bangladesh: A Cross Sectional Study

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

The novel Coronavirus (COVID-19) pandemic has imposed significant challenges on medical education worldwide. During the pandemic in Bangladesh, Occupational Therapy students were participated in their class through online. The study aimed to identify support and barrier of online Occupational Therapy education during COVID-19 in Bangladesh.

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A cross-sectional online survey was performed to conduct the study through email. Self-developed structured questionnaire were used for data collection. Descriptive analyses were used to analyze survey results.

Data were obtained from 112 responses where males were 34% and females were 66%. The study found that 75 (67%) participants had own devices and 37 (33%) participants responded that they were borrow the device from others during online study. Result revealed that students got support from the institution likes 80.4% (90) participants responded that they got regular online classes, 31.2% (35) said that teachers were supportive, 17.9% (20) participants responded that they got both review class and installment facilities. In family site 100.0% (112) Participant responded that they got internet support, 49.10% (55) quite space, 42.0% (47) care and 33.0% (37) got device support and encouragement. Online education barriers from the family found that 59.80% (67) participants responded that they had no family barrier, whereas 17.0% (19) faced financial barriers, 6.2% (7) internet connectivity, and a lack of parent's knowledge about online education. On the other hand, 63.4% (71) of the participants responded that they had not faced any institutional barriers whereas 16.1% (18) participants have faced internet problems and 10.7% (12) practical class.

Participants recommended that necessary steps should be taken to improve internet speed and provide free internet package and lecture method up-gradation for future online education program.

1. INTRODUCTION

"Corona Virus Disease 2019 (COVID-19) is often referred to as novel corona virus. World Health Organization (WHO) declared this disease a global health emergency of international concern on 30 January, 2020 and a pandemic on 11 March 2020" [1]. "The virus spread worldwide in a short period of time and driven to very serious and unexpected biological, psychological, social, spiritual and economic problems, people experiences severe behavior problem including boredom, depression, anxiety, fear, burnout, uncertainty conflicts, aimlessness, being caught up with negative news, and other psychopathological issues" [2]. "The current 2019 novel coronavirus disease (COVID-19) pandemic has shoved the education system out of tune all over the world. Every countries educational institution had to shift the learning system in online mode, even though no one was prepared for that" [3].

"In the early part of 2020, when some people knew about the disease and no effective treatment or vaccine was invented, medical schools and other educational institutes in different countries had to stop classroom teaching and take students away from their clinical placements" [4].

The aim of this study was to identify the "support and barriers of online occupational therapy education during COVID in Bangladesh". Digital education or online education is a sort of education where students use their home computers, laptops, or smartphones through the internet, staying away from their academic institutions. In the meantime, online teaching and learning have become an item of jargon in the sector of education because no other lieutenant provides education to the students in the institutes.

"Due to the ascendancy of the coronavirus epidemic, the entire world is discerning a massive death toll with extensive fear and uncertainty. Many countries worldwide are imposing measures to knock off the gap and abate the damages to students due to the current situation. Be that as it may, online instruction is not continuously a boon for the instructive community, as they pose numerous conclusions within the setting of online education and learning, leading to comprehensive concern over the agitated issue of teaching education. The current poll aims to illustrate the difficulties and opportunities faced by nations with less developed technology than those who have access to earlier contemporary technologies" [5]. COVID-19 has had a significant impact on education worldwide, resulting in several educational barriers. Here are some of the key challenges and barriers associated with COVID-19 and education, along with relevant references:

"School Closures: One of the most significant barriers to education during the pandemic has been the closure of schools. According to UNESCO, at the peak of the pandemic, over 1.5 billion students, accounting for over 90% of the

global student population, were affected by school closures. This has disrupted learning continuity and created significant challenges for students and teachers alike" [6]. "The difficulties of altering learning styles, having to do tasks at home, and a lack of clear instructions from instructors were the three biggest obstacles to online learning. About two-thirds of the respondents had to deal with these obstacles frequently or always. Mental health issues and a lack of study-friendly physical space were both prevalent. According to the research, having access to a quick and dependable internet connection was a greater priority than having a gadget or being technically skilled "[7].

"Limited Access to Technology: The transition to online learning during the pandemic has exposed the digital divide, as many students do not have access to the necessary technology or internet connectivity for remote learning. This lack of access has widened educational inequalities, particularly for disadvantaged students" [8].

"In the free-text responses, we evoked further difficulties with online learning. The hurdles were divided into five groups along with our original list: (1) technological, which concern hardware, software, and internet connectivity; (2) individual, which deal with students' learning styles; (3) domestic, which deal with issues at home or within the family, including financial distress; (4) institutional, which deal with management, medical curriculum, school resources, and educator skills; and (5) community barriers, which include lockdown restrictions, infrastructure issues, and so on. Students suggested various approaches to overcome these obstacles" [9].

"Online learning is frequently referred to as web-based learning due to the pervasiveness of the Internet connection, which causes a shift from on-campus to online learning. The COVID-19 pandemic, however, suddenly put professors and students in charge of teaching and learning courses that weren't intended for online delivery. In order to interact with the educational materials, university professors and students started investigating and accessing the academic internet" [10].

"Lack of access to technology and internet connectivity Many students in Bangladesh face challenges in accessing technology devices such as computers, laptops, or smartphones, as well as stable internet connectivity, which hampers their ability to participate in online learning" [11].

"According to much research, online and blended educational approaches are equivalent to conventional classroom models. Other scholars, on the other hand, indicated that students had negative attitudes toward online learning, implying that they did not prefer it over traditional classroom learning. According to Smart and Cappel (2006), the most common factor affecting satisfaction with online learning is the time taken to complete online modules designed for undergraduate courses. In the online elective courses, however, they found that overall satisfaction was high. Furthermore, research has shown that web-based courses have the ability to develop learning environments in which students actively interact with their content in order to gain new information" [12].

Remote learning models often result in reduced direct interaction between teachers and students, which can affect the quality of education. Lack of real-time feedback, guidance, and clarification opportunities may hinder students' learning progress [13].

2. MATERIALS AND METHODS

A cross-sectional study was selected under the quantitative design to identify the family and institutional support and barriers to online occupational therapy undergraduate education in Bangladesh during the COVID-19 pandemic.

2.1 Sampling

112 undergraduate occupational therapy students were selected by convenience sampling technique through an email invitation asking for survey participation. The participants were undergraduate B.Sc. in Occupational Therapy students from Bangladesh Health Professions Institute (BHPI), CRP across Bangladesh, who met the inclusion and exclusion criteria.

2.2 Instrumentation

A self-developed structure questionnaire was used to collect the data to determine family and institutional support and barriers to online occupational therapy education in Bangladesh. Data was collected by an online survey through a Microsoft Google Form. The researchers did a pilot test of the instrument, and experts reviewed it to justify its reliability and validity in the Bangladesh context.

2.3 Procedure

Researchers had obtained permission from the Institutional Review Board (IRB) of the Bangladesh Health Professions Institute (BHPI)

and the Centre for the Rehabilitation of the Paralyzed (CRP). Participants expressed concern about participating in this study.

To reduce the power relation bias, the questioners were disseminated through another person who had no direct academic relationship with the participants. A volunteer was recruited to collect the data. Firstly, he collected all students email addresses for data collection and sent the questioners through email for a fill-up by collecting all data volunteers submitted to the research team.

2.4. Data Analysis

Statistical Package for Social Science (SPSS) software version 22 was used for statistical analysis in this study. A descriptive analysis was done to determine the frequency and percentage of the participants. Descriptive findings were represented by graphs (bar charts) and tables.

On the other hand, researchers also used multiple response analysis, and the results were shown in the percentage of cases.

3. RESULTS

The study was conducted with 112 participants. Table 1 shows that among the participants Male were 38 (33.9%) and Female were 74 (66.1%). The study participants in different years of student among them 29 (25.9%) participants were 1st Year, 28 (25%) participants were 2nd Year, 33 (29.5%) participants were 3rd Year and 22 (19.6%) participants were 4th Year students. The participants living area were 48 (42.9%) urban, 40 (35.7%) semi urban, and 24 (21.4%) rural during Covid-19 situation.

Diagram 1 shows that 75 (67%) participants responded that they used own devices for study purpose whereas 37 (33%) participants responded that they were borrow the device from others during online study.

Table 1. Socio-demographic information of the participants

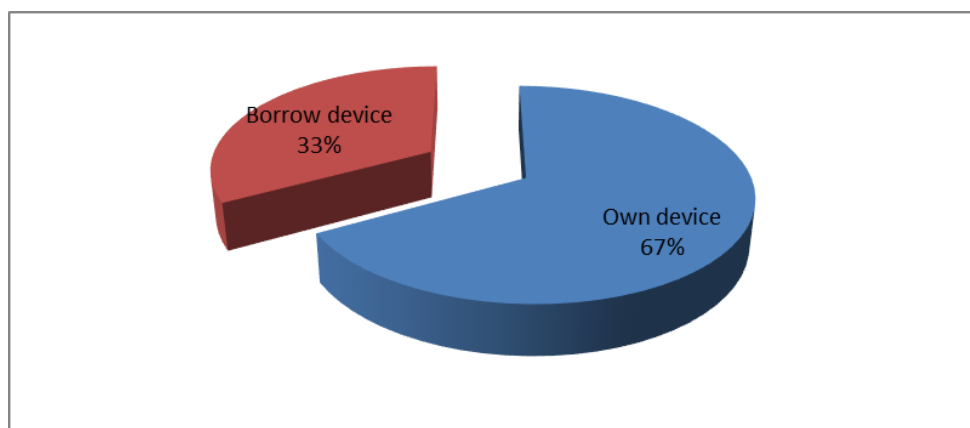| Socio-demographic characteristics	Frequency (N=112)	Percentage (%)
Gender of the participants		
Male	38	33.9%
Female	74	66.1%
Age (year)		
18-24	112	100%
Years of the Students		
1st Year	29	25.9%
2nd Year	28	25%
3rd Year	33	29.5%
4th Year	22	19.6%
Living area during Covid-19		
Rural	24	21.4%
Semi-urban	40	35.7%
Urban	48	42.9%

Diagram 1. Device status of the participant that is own and borrow

Diagram 2 shows that all participants were got support from the family in the pandemic period. 100.0% (112) Participant responded that they got internet support, 49.10% (55) quite space, 42.0% (47) care, 33.0% (37) device support and 32.1% (36) encouragement out of 112 participants. On the other hand, 59.80% (67) participants responded that they had no family barrier whereas 17.0% (19) faced financial barrier, 6.2% (7) internet connectivity & lack of parents knowledge about online

education, 5.4% (6) lacked friendly environment and 3.6% (4) household activity.

Diagram 3 shows that all participants got support from the institution in the pandemic period. Among the participants, 80.4% (90) Participants responded that they got regular online classes, 31.2% (35) said that teachers were supportive, 17.9% (20) participants responded that they got review class and instalment facilities, 16.1% (18) participants got lecture note and learning materials.
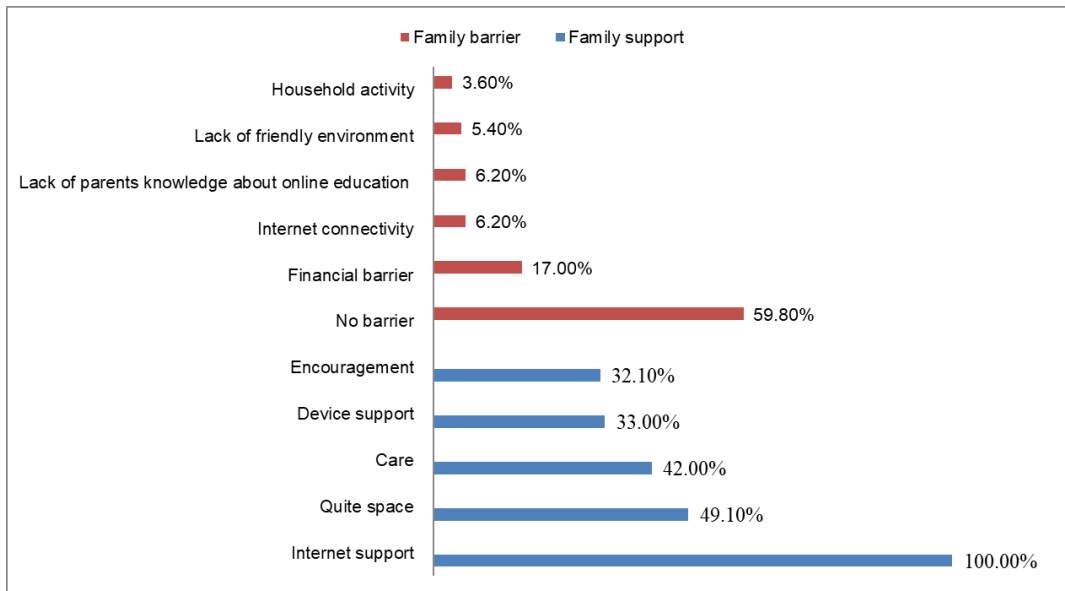

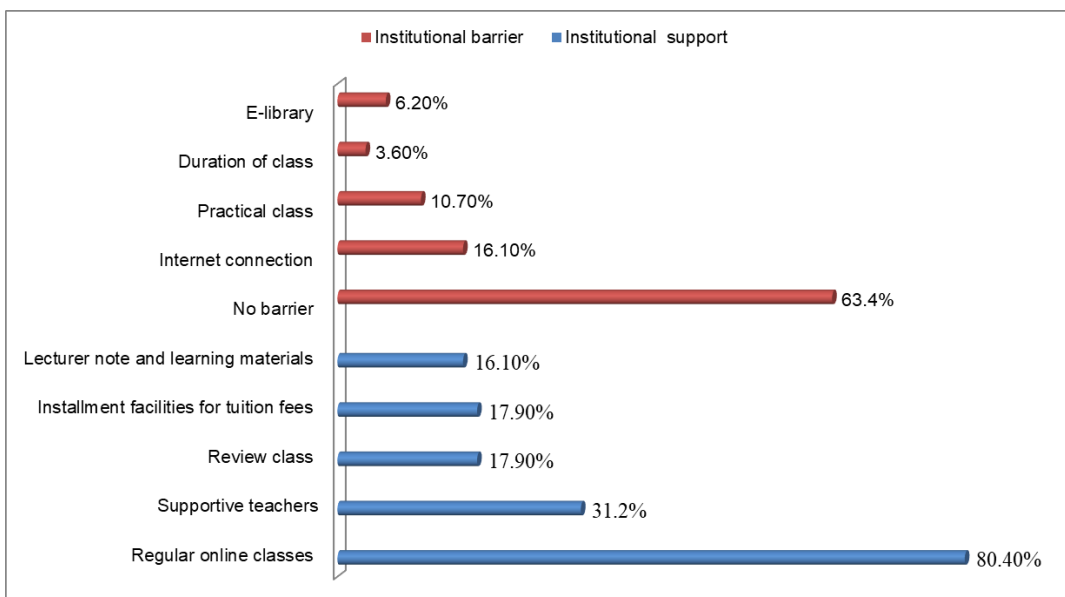**Diagram 2. Family support and barrier during online education**

Diagram 3. Institutional support and barrier during online education

This diagramshows that most of the 63.4% (71) participants responded that they had not faced any institutional barrier, whereas 16.1% (18) participants have faced internet problems, 10.7% (12) practical class, 6.2% (7) e-library and 3.6% (4) duration of the class.

4. DISCUSSION

"The study result found that 66.1% of participants were female and 33.9% male. Another study in Nepal showed that 50.5%of participants were male, and 49.4% were female out of 89 participants" [14].In this study, the participants, 42.9%, livedin the urban, 35.7% semi-urban and 21.4% rural area during COVID-19. The current study shows that 64.7% of participantslive in urban and 35.3% in rural [15].68.4% (n=78) participants responded that they had own devices out of 114 participants and 61.4% (n=44) participants responded that they were borrow any device from others during online study.

Online learning is now somehow effective; but, it faces several challenges in Bangladesh's educational system.The present study revealed few supports and barriers from their family for online learning over the pandemic period where all the participants highlighted the provision of the internet as support from their family, but they faced problems in internet connectivity. On the other hand, they highlighted the financial problems as the main barrier from their family. The study indicated COVID-19 as a cause of significantly reduced family income in Bangladesh, and they also said that students had to depend on their families for daily needs. Thus, managing extra money for online class related costs was a significant burden for them. Along with financial burden, they explore other family issues as barriers to online education, such as their family members' lack of knowledge regarding online learning [16].

Another study reported that 358 participants were either fully or moderately agreed that they had lack of the finances to afford the online education expenses and 444 participants also reported that they had lack of family support in pursing the online education out of 450 participants [17].Thus they experienced interferences in continuing homework, maintaining the schedule of online classes, keeping a proper environment for study. Some students expressed their inability to attend online classes due to those problems [18].

For the first time, the Occupational Therapy Department in Bangladesh conducted an online class due to this COVID-19 pandemic. In this study, 112 participants were responded that they took institutional support such as regular online classes, supportive teachers, review class, installment facilities for tuition fees, lecture notes & learning materials. On the contrary, 71 participants said that they had not faced institutional barriers

The COVID-19 health emergency has given humanity new options for achieving advancements within the structure of society and how it is was impacted; the human family because the same circumstance implies and is necessary for the development, maintaining and improving the very procedures for coexisting with other humans [19].

Several problems have been discovered, such as the lack of dedicated software for conducting online academic activities, lack of training and grooming, lack of mentoring, poor internet access, lack of smartphones, high internet package rates, and so on. Some researcher expressed that 144(45%) said their institution reduced semester fees during pandemic situation. A large amount of the respondents, 130(40.6%) said their institution did not reduce semester fees. This study also reported that 38.8% participants moderately agree institution has an appropriate environment for online education, 28.1%moderately agree with feeling comfortable with the online education and 31.3% disagree with online classes are very effective for the teaching-learning process [20].

However, few participants reported they face some institutional barriers like internet connection, practical class, and class duration. A recent study conducted in Bangladesh showed that Despite the prospects of online education in Bangladesh, multifarious challenges may be identified, which need to be addressed to make it successful, Most participants mentioned their online learning activities were upgrading by well-accomplished assignments, adequate support and help from the university such as the library and adequate use of the course resources. They ensured that respondents faced problems taking part in class due to low speed or no speed of the internet or frequent power cut problem. Online education has excluded all practical learning in Bangladesh [21]. In this study, 12 participants reported they faced problems in doing any practical work.

5. CONCLUSION

Online occupational therapy education in Bangladesh during the COVID-19 pandemic faced both support and barriers. The support came in the form of continuity of education, flexibility and convenience, technological advancements, and adaptation of curriculum. These factors allowed students to continue their education remotely, access learning materials, and engage in virtual classrooms. However, several barriers emerged, including limited access to technology, challenges in providing practical training and clinical experience, and communication and interaction limitations. Despite these obstacles, educational institutions and faculty members made efforts to overcome the barriers by providing additional support and alternative methods. While online education helped bridge the gap during the pandemic, it is important to address the challenges and ensure a balance between online and in-person components to deliver a comprehensive occupational therapy education.

In conclusion, this study focused on the support and barriers experienced by occupational therapy students in Bangladesh during the COVID-19 pandemic. The study found that most participants had their own devices and received support from their families and institutions. However, barriers such as internet connectivity and financial constraints were reported. The study highlights the importance of addressing these barriers to ensure effective online education during times of crisis. Overall, the findings shed light on the experiences of occupational therapy students in Bangladesh during the pandemic and provide insights for improving online education in similar contexts.

6. LIMITATION

This study faced some limitations to conduct the research. These were online surveys during this pandemic (COVID-19) situation. The researcher found limited literature on online education and sample size were small.

CONSENT

Informed consent was taken from all participants in this study. Participants' data were kept in confidential and participation was voluntary.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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